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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/772,267	02/06/2004	Shunpei Yamazaki	740756-2708	4444

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EXAMINER
MOORE, KARLA A

ART UNIT	PAPER NUMBER
1763	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	04/09/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

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Office Action Summary	Application No.	Applicant(s)	
	10/772,267	YAMAZAKI, SHUNPEI	
	Examiner	Art Unit	
	Karla Moore	1763	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *29 November 2006* .

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,3-31 and 33-45* is/are pending in the application.

4a) Of the above claim(s) *5-8,13-18 and 24-28* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,3,4,9-12,19-23,29-31 and 33-45* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *08 March 2005* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *1106*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1, 3-4, 29-30 and 41 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,679,167 to Muehlberger in view of U.S. Patent No. 6,203,619 to McMillan and U.S. Patent No. 5,563,095 to Frey.

3. Muehlberger discloses a semiconductor manufacturing apparatus substantially as claimed and comprising: means for transferring an object to be processed in a fist direction; at least one plasma generating means for performing a plasma treatment/at least one droplet spraying means for spraying a droplet to the object to be processed (column 7, rows 17-21); and means for moving the at least one plasma generating means/droplet spraying means in a second intersecting direction with respect to the first transferring direction of the object to be processed (Figure 3; column 6, rows 14-16 and column 10, rows 1-5). The treatment is performed at or adjacent to atmospheric pressure (column 8, rows 47-52).

4. However, Muehlberger fail to teach providing both of and/or a plurality of the plasma generating means/droplet spraying means.

5. McMillan teaches providing a plurality treatment processes in succession for the purpose of simultaneously, mass producing a plurality of integrated circuits in an automatic fashion in a short time (column 2, rows 27-51).

6. It would have been obvious to one of ordinary skill in the art at the time the Applicant's invention was made to have provided both of and/or a plurality of the plasma generating means/droplet spraying means in Muehlberger in order to simultaneously mass produce a plurality of integrates circuits in an automatic fashion in a short time as taught in McMillan.

7. Muehlberger et al. and McMillan disclose the invention substantially as claimed and as described above.

8. However, Muehlberger et al. and McMillan fail to teach the apparatus capable of simultaneously performing two separate plasma treatments in two chambers on a first part of an object and a second part of an object, respectively, simultaneously.

9. Frey teaches forming an apparatus capable of processing a plurality of parts of a single object in separate chambers, simultaneously, for the purpose of high volume fabrication (abstract).

10. It would have been obvious to one of ordinary skill in the art at the time the Applicant's invention was made to have provided an apparatus capable of processing a plurality of parts of a single object in separate chambers, simultaneously in Muehlberger et al. and McMillan in order to achieve high volume fabrication as taught by Frey.

11. With respect to claim 3, in Muehlberger et al. the first direction is a unidirection.

12. With respect to claim 4, in Muehlberger et al., the object is transferred continuously or with the use of step-feed by the means for transferring the object to be processed (See Figure 5).

13. With respect to claim 29, in Muehlberger et al., the treatment is performed by the plasma generating means/droplet spraying means for forming a film over the object, etching the object or ashing the object (abstract).

14. With respect to claim 30, in Muehlberger et al., treatment is performed by the plasma generating means/droplet spraying means while moving plasma generating means/droplet spraying means.

15. With respect to claim 41, the plasma generating devices of Muehlberger et al. comprise first and second electrodes (Figure 6, 120 and 122; column 13, rows 30-50) for generating a plasma between the first and second electrodes and the first and second electrode have a nozzle shaped opening.

16. Claims 9-12, 19-23, 31 and 33-40 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,679,167 to Muehlberger in view of U.S. Patent No. 6,203,619 to McMillan, U.S. Patent No. 5,563,095 to Frey and U.S. Patent 6,871,943 to Ogawa.

17. Muehlberger discloses a semiconductor manufacturing apparatus substantially as claimed and comprising: means for transferring an object to be processed in a fist direction; at least one plasma generating means for performing a plasma treatment/at least one droplet spraying means for spraying a droplet to the object to be processed (column 7, rows 17-21); and means for moving the at least one plasma generating means/droplet spraying means in a second intersecting direction with respect to the first transferring direction of the object to be processed (Figure 3; column 6, rows 14-16 and column 10, rows 1-5). The treatment is performed at or adjacent to atmospheric pressure (column 8, rows 47-52).

18. However, Muehlberger fail to teach providing both of and/or a plurality of the plasma generating means/droplet spraying means.

19. McMillan teaches providing a plurality treatment processes in succession for the purpose of simultaneously, mass producing a plurality of integrated circuits in an automatic fashion in a short time (column 2, rows 27-51).

20. It would have been obvious to one of ordinary skill in the art at the time the Applicant's invention was made to have provided both of and/or a plurality of the plasma generating means/droplet spraying means in Muehlberger in order to simultaneously mass produce a plurality of integrates circuits in an automatic fashion in a short time as taught in McMillan.

21. Muehlberger et al. and McMillan disclose the invention substantially as claimed and as described above.

22. However, Muehlberger et al. and McMillan fail to teach the apparatus capable of simultaneously performing two separate plasma treatments in two chambers on a first part of an object and a second part of an object, respectively, simultaneously.

23. Frey teaches forming an apparatus capable of processing a plurality of parts of a single object in separate chambers, simultaneously, for the purpose of high volume fabrication (abstract).

24. It would have been obvious to one of ordinary skill in the art at the time the Applicant's invention was made to have provided an apparatus capable of processing a plurality of parts of a single object in separate chambers, simultaneously in Muehlberger et al. and McMillan in order to achieve high volume fabrication as taught by Frey.

25. Muehlberger et al. McMillan et al. and Frey et al. disclose the invention substantially as claimed and as described above.

26. However, Muehlberger et al. McMillan et al. and Frey et al. fail to disclose either of the first or the second plasma generating means or a third plasma generating means as an ink jet device.

27. Ogawa teach that an ink jet device can be used in various processing fields of processing for the purpose of accurately ejecting very small droplets of material as in ink jet printing (column 10, rows 28-42). The ink jet head is capable of scanning in an intersecting direction with respect to a substrate transfer direction (column 11, rows 27-31).

28. It would have been obvious to one of ordinary skill in the art at the time the Applicant's invention was made that by choosing to use an ink jet device for ejecting processing material in Muehlberger et al. McMillan et al. and Frey et al. accurate injection of very small droplets of material could be applied as taught in Ogawa.

29. With respect to claims 10, the treatment is performed at or adjacent to atmospheric pressure (column 8, rows 47-52).

30. With respect to claims 11, in Muehlberger et al. the first direction is a unidirection.

31. With respect to claims 12, in Muehlberger et al., the object is transferred continuously or with the use of step-feed by the means for transferring the object to be processed (See Figure 5).

32. With respect to claim 19, see treatment of claims above, similar recitations are claimed.

33. With respect to claim 20, in Muehlberger et al., the plasma treatment is performed by the plasma generating means/droplet spraying means for forming a film over the object, etching the object or ashing the object (abstract).

34. With respect to claim 21, the objects are transferred unidirectionally in Muehlberger (Figure 5).

35. With respect to claim 22, the object is transferred continuously or with the use of step-feed by the means for transferring the object to be processed (See Figure 5).

36. With respect to claim 23, as noted above, the purpose of providing a plurality of treatments, such as deposition, etching and ashing, all happening simultaneously is for increased productivity.

37. With respect to claims 31, as described above, the droplet is attached onto a surface of the object while transferring the object and moving the ink jet device.

38. With respect to claims 33-36 and 38-40, each of these limitations has been described in the rejection of other claims.

39. With respect to claim 37, which is drawn to a processing material, the courts have ruled that aepressions relating the apparatus to contents thereof during an intended operation are of no significance in determining patentability of the apparatus claim. Ex parte Thibault, 164 USPQ 666, 667 (Bd. App. 1969).

40. With respect to claims 43 and 45, the ink jet heads of Ogawa comprise a nozzle provided with a hole for pushing out the droplet form the hole.

41. With respect to claims 42 and 44, the plasma generating devices of Muehlberger et al. comprise first and second electrodes (Figure 6, 120 and 122; column 13, rows 30-50) for generating a plasma between the first and second electrodes and the first and second electrode have a nozzle shaped opening.

Response to Arguments

42. Applicant's arguments with respect to claims 1, 3-4, 9-12, 19-23, 29-31 and 33-45 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

43. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Karla Moore whose telephone number is 571.272.1440. The examiner can normally be reached on Monday-Friday, 9:00 am-6:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Parviz Hassanzadeh can be reached on 571.272.1435. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Karla Moore
Primary Examiner
Art Unit 1763
19 February 2007